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ABSTRACT

The interview techniques developed by Carol Chomsky were used in a comparative study of the language acquisition of 32 bilingual and monolingual third grade students. After these students were matched for age, socioeconomic status, IQ, family environment (both parents in the home), and reading ability, they were placed in four groups--bilingual-high reading ability (BH), bilingual-low (BL), monolingual-high (MH), and monolingual-low (ML). Over a period of two weeks, the four boys and four girls in each group were interviewed in four situations designed to have students determine implicit subjects (ask/tell), verbs (promise/tell), underlying relationships not expressed in surface structure, and pronominalizations. The major group differences that were found for these patterns of language development were between high/low reading achievement groups, not between bilingual and monolingual children. Chomsky's major findings were confirmed, showing the late acquisition of some syntactic structures and the wide range of differences in rate of acquisition among children. But acquisition of the selected grammatical structures was found to be a function of individual development rather than age. Some of the data also raised questions regarding the order of acquisition within the supposed hierarchy of language constructions. Another significant finding that differed with Chomsky's findings was that ask/tell and promise structures were not known by all children over nine years old. (RL)

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THE SYNTAX OF BILINGUAL CHILDREN:

A COMPARATIVE STUDY

Patricia D. Van Metre

The past two decades have yielded numerous descriptive language acquisition studies. Our bookshelves have burgeoned with theoretical volumes and research investigations concerned with how the human child gains a language system, and the accumulation of studies has often led to modification of applied language therapy, deaf education and language arts education in general. It seems important, therefore, to investigate whether the findings of some studies conducted with monolingual English-speaking children (usually middle class) can be confirmed with bilingual children and with children of other nonconforming classes, before research

generalization and application are practiced on these nonconforming groups. For example, questions of orderly sequence and time of acquisition are of crucial importance to the educator and other applied linguists, and are aspects of acquisition which might well vary for the child learning Spanish and English in a bilingual community in the United States.

Studies by Bowerman (1970), Omar (1970), Chomsky (1969), Slobin (1970), and others have indicated that complexity of grammatical markers may affect the time of emergence of syntactic forms for children. As the young bilingual child acquires linguistic means to express his intentions, the formal devices of two concurrently presented languages perhaps are instrumental in determining the sequence or time of acquisition of related forms in one or both of the languages he is learning; the effect might be a time or order of language acquisition different from that of the monolingual child.

This report is of an investigation of the acquisition of specified syntactic forms by bilingual Spanish/English-speaking children; it includes an analysis of syntactic structures of third grade children who scored either high or low on a standardized reading test. It is also a report of how the findings of this investigation compare with those of Carol Chomsky (1969, 1972), whose studies were a model for the present research.

The interview techniques employed are those designed by Chomsky (1969) to investigate the language of children ages five to ten by having them interpret different structures when asked questions

about sentence content. Language production requirements are minimized by using the manipulation of objects and figures and the identification of pictures.

The constructions investigated are concerned with:

1. Interpretation of the words "ask" and "tell," and interpretation of ask-q (ask in the sense of question) sentences which violate the general principle of minimal distance for determination of the implicit subject of a complement verb (MDP).
2. Interpretation of promise sentences which violate the general principle of minimal distance for determination of the implicit subject of a complement verb.
3. Interpretation of syntactically complex sentences in which the underlying relationships are not expressed in the surface structure.
4. Interpretation of restricted pronominal reference to nonidentity.

Briefly, knowledge of rules of grammar at various hypothesized levels of complexity was investigated. Within each construction, generally applicable rules were expected to be learned first, with the more complex exceptional rules following. (See Chomsky 1969 for a review of the grammar theory.)

In 1969 Chomsky investigated the four structures with forty middle-class, English speaking children in New England and drew some conclusions about language acquisition for the children in her study.

Structures 1, 2, and 3 are strongly subject to individual rate of development. Structures 1 and 2 are acquired between the ages of 5.6 and 9, and are known by all children 9 and over. Structure 3 is still imperfectly learned by some children even at age 10, and structure 4 is acquired fairly uniformly at about age 5.6 (Chomsky 1969:120).

A second Chomsky study in 1972 confirmed the conclusions of the 1969 research for structures 1, 2, and 3. Pronominalization, structure 4, was not discussed in the 1972 report.

The significance of the Chomsky studies resides in the revelation of the late acquisition of some syntactic structures and of the considerable difference in rate of acquisition for different children (unrelated to their ages), but a shared order of acquired levels of complexity within each structure regardless of when the children acquired them. Chomsky's second study further revealed an orderly sequence of acquisition among the various structures on which she reported. Her investigative techniques appear to succeed in defining differences in the linguistic competence of English-speaking, monolingual elementary school age children at various developmental stages in regard to the particular structures studied.

The present study tested the applicability of the Chomsky interview techniques to the investigation of language variability in selected groups of bilingual children and of children, both monolingual and bilingual, who scored low on a standardized measurement of a language skill--reading, to determine if the techniques could

identify and define linguistic differences in those groups.

Subject Selection

For the research subjects, four groups (Bilingual, High--BH; Bilingual, Low--BL; Monolingual, High--MH; and Monolingual, Low--ML), each of eight subjects (four boys and four girls), were selected from public school (Tucson District Number One) third-graders who were administered the Metropolitan Achievement Test (Metro 70), Reading, scoring in the top or bottom one-fourth of scores in the three schools from which the subjects were drawn. A comparative study of the monolingual children, matched with the bilingual population of the study, was made to provide information on subjects comparable in many ways with the research subjects but different in cultural-linguistic background.

The four groups of children were matched using the following hierarchy of criteria. (Criteria 3 and 8 were not applied to the monolingual groups.)

1. Was a third-grade student.
2. Scored in top or bottom one-fourth of scores in the Metropolitan Test.
3. Was bilingual. ("Bilingual" is used simply to describe a child in whose home Spanish, or English and Spanish, were spoken and had been spoken through his life. When there was any doubt about a child's bilingualism, a Spanish-speaking adult conversed for a short time with the child to determine if he both understood and

produced Spanish in its everyday forms of usage. The aim of this criterion was to establish that the child was dealing linguistically with the two language systems. No attempt was made to determine specific levels of bilingual fluency or to measure the dominant language of the children.)

4. Was in the age range of 8-1 through 9-9 at the time of testing.

5. Had no special problems such as emotional disturbance, sensory disability, physical illness, speech defect, or identified learning disability.

6. Measured in average IQ range (84-116) on the Lorge-Thorndike Intelligence Test.

7. Was classified at socioeconomic level of family between approximately \$4,000 and \$10,000 annual income.

8. Had Spanish surname.

9. Had both father and mother in the home.

In addition to providing a hierarchical system for matching the four groups of subjects on relevant characteristic variables, the criteria served to eliminate from selection consideration subjects whose scores might be invalid or unreliable.

The Interviews and Findings

Over a period of two weeks, the thirty-two children were interviewed, each child individually at his school. During interviews

and analyses each subject's Group membership was unknown to the researcher.

Standard stimulus sentences were used with every child; however, for the most part the interview forms reserved wide flexibility for questioning each child in a way individually suited to determining that child's knowledge of the test structures. No time limits were imposed. Order of presentation of some sentences was varied from subject to subject. The figures of Charlie Brown, Lucy, Linus and Snoopy, used as manipulative aids, were found to be entirely familiar to all of the children interviewed.

Interview transcriptions are cited in the report below when they illustrate response patterns described. In all interview transcriptions the interviewer's remarks are preceded by a dash, the subject's responses are indented, and statements of an attendant child (X) are indented and parenthesized. Other interview comments are bracketed.

Interview I-Ask/Tell

Three levels of complexity of ask-q (ask in the sense of question) constructions were hypothesized to reflect the order in which they were learned. The proximity of the noun phrase subject of the complement to the complement verb functions to help establish the complexity level of a language construction. In general, the implicit subject of the complement verb is, in English, the noun phrase preceding the verb most closely. Exceptions to this generally

governing principle constitute increased language complexity. This Minimal Distance Principle (MDP) proposed by Rosenbaum (1965 and 1967) is useful in formulating the complexity of the promise/tell constructions of Interview II as well as the ask/tell constructions.

At Level 1, the subject, verb, and question word of the response are supplied in the ask-q eliciting construction.

Example

Eliciting sentence: Ask (Tell) Laura what color
this is.

Response to ask: What color is this?

The subject of the response is again supplied in the Level 2 eliciting sentences, but the complement clause of the question must be expanded in the response to add the question word and the verb.

Example

Eliciting sentence: Ask (Tell) David the color of
this book.

Response to ask: What color is this book?

At the third Level of complexity, the complement clause in the response must be expanded to add both the subject and the auxiliary verb; the question word is supplied in the eliciting sentence.

Example

Eliciting sentence: Ask (Tell) Karl what color to
make the square.

Response to ask: What color should I make the square?

Throughout each of these interview sequences the order of

presentation of ask-q and tell eliciting sentences was varied with a sequence sometimes beginning with an ask-q instruction and sometimes with a tell instruction.

In addition to these three Levels of complexity, the child's knowledge of subject assignment in ask-r (ask-response)/tell constructions was investigated. These constructions were hypothesized to be at a lower level of complexity than were any of the ask-q constructions. All thirty-two children correctly interpreted the ask-r/tell constructions. Two sample exchanges follow:

Interview Example. Donald L. (Group BH, Age 9-1)

--Ask X to stand up.

Will you stand up.

--Tell X to walk over to the door.

Will you walk over to the door.

--Tell X to come back.

Will you come back.

--Ask X to go back to class.

Will you go back to class.

Interview Example. Ricky F. (Group BL, Age 9-4)

--Here are all the toys standing in line. Who is first in line?

Snoopy.

--Suppose Linus asks to go first in line. What does he say?

May I please be in front?

--Good. Let's put him there.

--Now, suppose Charlie Brown asks Lucy to go first.

What does he say?

Lucy, you want to go first?

--Let's put her there.

--Suppose that Snoopy asks to go first in line again.

What does he say?

Lucy, could I please be in the front?

--Now suppose Charlie Brown asks Linus to go first.

What does he say?

Linus, want to be in the front?

--And suppose Charlie Brown asks Lucy to go first.

What does he say?

Lucy, do you want to go first?

--Suppose Lucy asks Snoopy to go first. What does she say?

Lucy?

--Lucy asks Snoopy to go first. What does she say?

Snoopy, could you go first now?

(He puts Snoopy at the front of the line.)

Because of particular variables in the children's ask-q/tell responses, two analyses were performed on the interview data. In Analysis I, which will be discussed first, the interview information was interpreted as Chomsky (1969) did: success was marked by

ask-q responses to ask-q instructions and tell responses to tell instructions, while failure was marked by undifferentiated responses to both ask-q and tell instructions. Subjects were identified as having reached a Stage A through E, depending upon ask-q/tell differentiation of instructions.

Failure at all three Levels placed a child at Stage A. Eighteen children scored at A (Five BH, Seven BL, Six ML). Chomsky reported that in her study, "children in Stage A process ask and tell alike for all constructions, imposing a tell interpretation everywhere (1969:54)." Most of the children (fifteen of eighteen) placed at Stage A in the present study gave similar responses to ask-q and tell instructions, but did not impose a "tell interpretation" everywhere. Instead, it was the rule for them to supply ask-q responses to tell instructions; in other words to answer with a theoretically more complex structure when a theoretically less complex structure was called for. Only one child in the present study imposed a "tell interpretation" everywhere. Mike O.'s responses are typical of the children at Stage A in the present study.

Interview Example. Mike O. (Group BH, Age 9-5)

--First, I want you to ask X some things, like

--Ask X what time it is.

What time is it?

(14 minutes after 9:00)

--Ask X her last name.

What's your last name?

(Y----.)

(Level 2)

--Ask X her teacher's name.

What's your teacher's name?

(Miss L---.)

(Level 2)

--Now I want you to tell X some things, like

--Tell X how many pencils there are here.

How many pencils there are here?

(Three.)

--Tell X what color this crayon is.

What color is that crayon?

(Blue-green.)

--This time don't ask. I want you to tell X something.

--Tell X what color that book is.

What color is the book?

(Black.)

--Ask X what this is.

What is this?

(Lucy.)

--And would you ask X what's in this box.

What's in that box?

(Crayons.)

Success in Level 1 constructions but failure in Level 2 constructions characterized Stage B. No child in the present study was at Stage B in Analysis I; Chomsky identified two in her 1969 study.

Children at Stage C were marked by successful differentiation of ask-q and tell constructions at complexity Levels 1 and 2, but failure to differentiate at Level 3. Four children fell at this Stage, one in each Group. Robert V. is representative of the two children who consistently gave a tell response to all stimulus sentences for Level 3, failing to differentiate the ask-q instructions, although his responses had been correct at Levels 1 and 2. He responded with "tell" even to the two Level 1 instructions included in the sequence below.

Interview Example. Robert V. (Group BH, Age 9-5)

--Would you first ask X what to give Snoopy.

Give him a baseball.

--Now would you tell X what to feed Snoopy.

Hot dog.

--Ask X what to give him next.

Some flowers.

--Would you tell X what to give him.

Ah . . . a whistle.

. . .

--Will you ask X what to put back first.

The baseball bat.

--Ask X what to put back next.

The football.

--Tell X what to put back.

The scissors.

--Now ask X what food to put back now.

The hot dog.

--Ask X what you should put back now.

A baseball.

--This time I want you to ask, not tell. Listen. Ask X what to put back next.

A watch.

--Ask X what food to put back now.

Potato chips.

--Ask X what you should put back now.

I should put back some cards. (After a long pause.)

(Level 1)

...

Coloring Shapes:

--Would you first tell X what color to make the rectangle.

Red.

--Ask X what color to make the circle.

Green

--Tell X what color to make the star.

Blue.

--Ask X what color to make the triangle.

Black.

--Tell X what color to make the diamond.

Purple.

The second kind of response given by the children at Stage C, that of usually giving a tell response to both ask-q and tell instructions, but occasionally giving an ask-q response to tell instructions, is represented by the following exchange.

Interview ~~Example~~. Fabian S. (Group ML, Age 9-0)

--Now ~~we're~~ going to put these things back into the box, again asking and telling as we put them back one by one.

--Would you ask X what to put back first.

Coffee pot.

--Ask X what to put back next.

Soda.

--Tell X what to put back.

Potato chips.

--Ask X what to put back next.

Hot dog.

--And ask X what you should put back now.

(A long pause with no answer.)

--Ask X what you should put back now.

Cards.

--Ask X what you should put back now.

(A long pause.) Flower pot.

Coloring Shapes:

--Fabian, will you first tell X what color to make the rectangle.

Yellow.

--Now ask X what color to make the circle.

What do you make the circle?

(Purple.)

--Tell X what color to make the star.

What color do you make the star?

(Tell me.)

Green.

--Ask X what color to make the triangle.

What color do I make the triangle?

(Red.)

--Tell X what color to make the diamond.

What . . . blue.

The six children (one BH, four MH, one ML) at Stage D consistently asked a question in response to Level 3 instructions containing ask-q, and told in response to tell instructions; however, they failed to assign the correct subject to the complement verb. Stage D children also had to have succeeded with Level 1 and 2 constructions.

Interview Example. Fred C. (Group MH, Age 8-6)

--Would you first ask X what to feed Snoopy.

What should you feed Snoopy?

(A hot dog.)

--Would you tell X what to feed Snoopy.

Feed Snoopy the hot dog.

(Not the same thing!)

Oh, wait. Feed Snoopy a bug.

--Now ask X what to give him.

What shall I ask her?

--Ask X what to give Snoopy.

What do you mean? Just say: What are
you going to give him?

--That's all right, but listen, ask X what to give
him.

What are you going to give Snoopy now?

(Spider.)

--Ask X what to give Snoopy next.

What to give Snoopy next? What are you going
to give Snoopy next?

(The bug.)

--Would you tell X what to give him.

Give him the whole bag of potato chips.

--Ask X what you should give him now.

Give him the ketsup. Give him the whole bottle
of ketsup.

(No; you ask me!)

Oh, okay. What should I give him? What should
I give him now?

(The coke.)

(Level 1)

--Will you tell X what color to make the diamond.

Make the diamond yellow-orange.

--Now ask X what color to make the star.

What should I make . . . what color should I make
the star?

(Violet-blue.)

--Ask X what color to make the triangle.

What color should . . . what color should you
make the triangle?

(Pink.)

Children at Stage E were characterized by differentiation of ask-q and tell constructions at all Levels and by assignment of the correct subject in response to Level 3 ask-q instructions. All four children who scored at this Stage were members of one of the High Groups; three were in the Monolingual High Group. Wendy's interview is representative of the responses of a child clearly at Stage E.

Interview Example. Wendy R. (Group BH, Age 9-0)

--Would you first ask X what to feed Snoopy.

X, what do you feed Snoopy?

(Hot dogs.)

--Now, tell X what to feed Snoopy.

Feed Snoopy a hot dog.

--Ask X what to give Snoopy.

What do I give him?

(Scissors.)

--And ask X what you should feed him now.

What should I feed Snoopy now?

(Potato Chips.)

--Now one by one let's put these items back into the box,
again with asking and telling.

--Would you ask X what to put back first.

What . . . the football.

--Would you ask X what to put back next.

The scissors.

--Now tell X what to put back.

Put the clock back.

--X, would you ask Fred what to put back next?

(What do you put back next?)

What do you put back next? What did she ask me?

--Ask him again.

(What do you put back next?)

The baseball bat.

--Now, Fred, tell X what to put back.

Put back the hot dog.

--Now, Fred, ask X what to put back.

What should I put back now?

(This.)

--Ask X what you should put back now.

What should I put back now?

(This. The cow.)

(Level 1)

--Now tell X what to put back.

Put back the coke.

--Now ask X what you should put back.

What should I put back . . . put back?

(X hands a shovel to Fred.)

The shovel.

(Level 1)

Coloring Shapes:

--Would you first tell X what color to make the rectangle.

Make the rectangle red-orange.

--Now ask X what color to make the circle.

What color should I make . . . what color should I make . . . I don't know how to say it . . . what color should I make the circle?

(This.)

Blue-green.

--And tell X what to give Snoopy now.

Potato chips.

--And ask X what you should give him now.

X, what should I give Snoopy?

(Cards.)

--Now one by one we're going to put the items back into the box, asking and telling as before.

--Would you ask X what to put back first.

X, what do I put back first?

(The whistle.)

--And ask X what to put back next.

What do I put back next?

(The lizard.)

--Tell X what to put back.

The pair of teeth.

--Ask X what food to put back now.

X, what food should I put back?

(Coke.)

--And ask X what you should put back now.

X, what should I put back?

(Cards.)

(Level 1)

The other three children at Stage E used "we" in their responses to Level 3 ask-q instructions, either all the time or part of the time.

Statistical tests (Mann-Whitney U with a correlation for ties in rank, .05 probability level) of Analysis I data established no difference between the BH and BL Groups, although a difference was found between Groups MH and ML. No difference was established between Groups BL and ML, but a difference did occur between the two high Groups.

Linguistic Analysis I of the ask-q/tell data considered primarily the child's success or failure to discriminate between the structures at each Level, without regard to whether the response pattern was consistently ask-q or tell. Chomsky (1969, 1972) found the children who failed to discriminate between ask-q and tell instructions in her studies gave tell responses to both ask-q and tell instructions. This pattern of responses is what might be expected when a child fails to discriminate, since the ask-q structure is theoretically more complex grammatically. In the present study, however, failure to discriminate instructions was most often marked by ask-q responses to both ask-q

and tell instructions. Furthermore, Chomsky's established orderly pattern of the child's passing all Levels lower than the highest at which he succeeded did not hold in the present study using Chomsky's analysis form. A second linguistic analysis of the data was called for, chiefly to examine the consistent response patterns of each child, noting whether the simpler tell response or the more complex ask-q response occurred.

Analysis II placed emphasis on the child's knowledge of the complex ask-q construction as opposed to the emphasis placed on the child's differentiation of instructions in the first analysis. In order to be able to compare the results of the second analysis with the first, Stages A through E were again designated and were defined generally the same as in the first analysis, but the Stages were sub-classified into Ranks for Analysis II.

Each child was first placed at a Stage according to his knowledge of ask-q constructions, as exemplified by his production of ask-q responses to instructions but regardless of whether he differentiated between ask-q and tell instructions. The assumption underlying this appointment to Stage is based on the grammatical theory that ask-q is a more complex construction than is tell; therefore, if the child gives ask-q interpretations and responses, even though he may give them nondifferentially to ask-q and tell instructions, he provides evidence of knowledge of the ask-q construction. Placement at Stage E remained the same as in the first analysis, requiring knowledge of subject assignment.

After being classified at a Stage, the child's linguistic behavior was further analyzed to identify him at a Rank within the Stage classification. The Ranks are indicated by subscripts to the Stage design-

nations. An explanation of each Rank is presented in Table 1. The order emanates from a possible sequence of development in regard to the ask-q/tell structures tested.

There were major differences in the children's Stage placements by the two analyses and in the consequent modified results in applied tests of difference. Most children who were placed at different Stages as a result of Analysis II were advanced, a few moving from Stage A in the first analysis to Stage E in the second. A small number of children were moved back one or more Stages as a result of the more refined descriptions of Stages and Ranks.

The statistical analysis performed on the distribution data, using the same test of difference (Mann-Whitney U) applied to the results of the first analysis, established a difference between Groups BH and BL and between Groups MH and ML. The tests of Groups BH and MH, as well as of Groups BL and ML, established no difference.

Chomsky found that "all children learned to handle the simple Cases (Levels) before the complex ones (1969:54);" no child succeeded at a complex Level without also having succeeded in the less complex constructions. The second linguistic analysis in the present study manifested this same orderly development, while the first analysis did not. The refined rankings of the second analysis were required before the order was evident. (The first analysis, however, provides significant information concerning the young child's confusion between ask-q and tell, even after he interprets correctly some ask-q structures.)

Table 1. Interview I--Ask/Tell: Stage-Rank Descriptions Used in Analysis II of Ask-q/Tell Constructions

Stages and Ranks	Descriptions
A ₁	Level 1: Success in tell structures; failure in ask-q structures. Levels 2, 3: Failure.
A ₂	Level 1: Mixed ask-q and tell responses to both ask-q and tell instructions. Levels 2,3: Failure.
B	Level 1: Success in both ask-q and tell structures. Level 2: Success in tell structures; failure in ask-q structures. Level 3: Failure.
C ₁	Levels 1, 2: Success in ask-q structures; failure or mixed responses in tell structures. Level 3: Failure.
C ₂	Levels 1, 2: Success in both ask-q and tell structures. Level 3: Failure.
D ₁	Levels 1, 2: Success in ask-q structures; failure in tell structures. Level 3: Success in ask-q structures; failure or mixed responses in tell structures. Failure in subject assignment.
D ₂	Levels 1, 2: Success in both structures. Level 3: Success in ask-q structures; failure or mixed responses in tell structures. Failure in subject assignment.
D ₃	Levels 1, 2: Success in both structures. Level 3: Success in both structures. Failure in subject assignment.
E ₁	Levels 1, 2: Success in ask-q structures; failure in tell structures. Case 3: Success in ask-q structures; failure or mixed responses in tell structures. Mixed subject assignment.
E ₂	Levels 1, 2: Success in both structures. Level 3: Success in ask-q structures; failure or mixed responses in tell structures. Mixed subject assignment or assignment of "we."
E ₃	Levels 1, 2, 3: Success in both structures. Level 3: Mixed subject assignment or assignment of "we."
E ₄	Levels 1, 2, 3: Success in both structures. Level 3: Success in subject assignment.

The progression through the Stages and Ranks was not a progression by age. A child age nine years, six months old scored at A_1 ; another child of the same age scored at E_3 . Children age 8-6 and 8-7 scored at almost every Stage. The orderly sequence found in the data appears to be related to the child's particular stage of linguistic development and not to his age.

Interview II--Promise/Tell

Sentences in this interview were designed to investigate knowledge of the verbs "promise" and "tell" in corresponding structures. As discussed earlier, the less complex tell constructions conform to the general Minimal Distance Principle, since each subject of the complement verb is the noun phrase most closely preceding that verb in the eliciting sentence. The more complex promise forms are exceptions to the MDP, the subject being supplied in the eliciting sentence but not as the noun phrase most closely preceding the complement verb.

Every child passed part one of the interview, which established that he understood the concept of the word "promise" in some syntactic structures. Even the children, such as Jenny G., who subsequently failed the test sentences were able to express to the interviewer acceptable concepts of promise.

Interview Example. Jenny G. (Group ML, Age 8-6)

--Jenny, can you tell me what you would say to a friend if you promised her that you would call up this afternoon? What would you say if

you promised her that?

I'd call her.

--Good. What does it mean to promise?

I'll call.

--Suppose your mother promised you that she would
bake some cookies. What does that mean that she
promised that she would?

She will.

--She will. Good. What's special about a promise?

You have to do it.

Before the test items were administered, the children were interviewed to determine that they understood the actions required of the test sentences. (No language production was required of the children.) Three of the children did not understand the action of a somersault, but after it had been demonstrated, had no difficulty remembering the action and associating it with the word "somersault". All three of these children were bilingual.

Developmental Stages 1-4 were established following the Chomsky (1969) model. Only the test sentences in part five were used to score the children at one of the four Stages.

Sample sentences from part five

--Snoopy promises (tells) Charlie to hop up and
down. Make him hop.

--Charlie promises (tells) Snoopy to do a somersault.
Make him do it.

The children at Stage 1 (one BL, five ML) applied the Minimal Distance Principle to almost all test verbs, but had not yet learned the promise exception. These children also assigned the second noun phrase in the sentence as subject of the complement consistently for both tell and promise. Stages 2 and 3 were transitional stages: at 2 the children (one BL, one MH) inconsistently applied the MDP to promise and also made mistakes with tell; at 3 the children applied the MDP consistently to the conforming word "tell", but exhibited inconsistency with the nonconforming word "promise" (one BH, six BL, one MH, three ML).

At Stage 4 the children applied the MDP consistently to "tell" and applied the rule for exception consistently to the verb "promise" (seven BH, six MH).

Chomsky (1969:38) found the developmental stages did not correlate highly with age:

The range for children who get everything right is from 5.3 to 10.0. The range of children in the earliest stage (consistent NP₂ assignment) is from 5.0 to 8.10. The "transitional" children range from 5.1 to 9.7. It is surprising that the acquisition of this particular structure is taking place in some children before the age of 5, and in others after the age of 9.

In the present study the age ranges of children scoring at the lowest Stage and at the highest Stage were almost identical: 8-6 to 9-8 for Stage 1; 8-6 to 9-6 for Stage 4.

Mann-Whitney U tests established a difference between Groups BH and BL and between Groups MH and ML. No difference was found between the two high Groups. The difference established between Groups ML and BL, with the bilingual children scoring significantly higher, is probably the most intriguing outcome of the analysis of Interview II. Although one must practice caution in generalizing from the small sample in this study, a possible difference between bilingual children who score low in measured reading achievement and monolingual children who score low in measured reading achievement, in regard to the promise/tell structures tested, was indicated.

In summary of Interview II in the present study, it should be restated that all children in the sample understood the concept of promise in some syntactic environment; many of these third-grade children had not yet mastered full knowledge of promise in the tested more complex syntactic structure, which violates the general principle of minimal distance for determination of the implicit subject of a complement verb.

Interview III--Easy to See

This interview investigated each child's interpretation of syntactically complex sentences in which underlying Subject, Verb, Object relations are not expressed in the standard English order (Snoopy is easy to see.). A less complex alternative but incorrect interpretation applying standard English order was possible within the interview presentation.

A large blindfolded Snoopy doll was placed on a table in front of the child. Each interview opened with, "Is Snoopy easy to see or hard to see?" followed by, "Would you make him easy (hard) to see." For the remainder of the interview an approximate form was followed, but, as with the other interviews, a wide latitude of flexibility was maintained throughout to enable the interviewer to explore each child's knowledge. Each child was scored Correct or Incorrect according to his interpretation of the question, "Is Snoopy easy to see or hard to see?"

Interviews with children who answered correctly were generally short, often consisting of three brief exchanges between interviewer and child. A variety of ways to make Snoopy hard to see were selected by the children.

Interview Example. Sean S. (Group MH, Age 9-6)

--Is Snoopy easy to see or hard to see?

Easy.

--Would you make him hard to see.

--Tell me what you did.

Put him under the desk.

Interview Example. Ricky F. (Group BL, Age 9-4)

--Is Snoopy easy to see or hard to see?

Easy.

--Would you make him hard to see.

Put him away. (Ricky passes Snoopy as far away as the extension of Ricky's arm allows.)

--Tell me what you did.

I put him farther so I won't see him.

Several of the children who were correct in their answers referred to the blindfold during the interview. Because Snoopy's eyes and part of his head were covered by the bandana, an ambiguous interpretation of "hard to see" was possible. After all, Snoopy's eyes and part of his head were "hard to see" when the blindfold was in place. Probing was essential with some children to determine to which meaning of "hard to see" they referred. Otherwise, for a child who answered "hard to see" on the basis of the alternative perception, the evaluation of knowledge of the test constructions would be deflected.

Interview Example. Wendy R. (Group BH, Age 9-0)

--Is Snoopy easy to see or hard to see?

Easy to see.

--Would you make him hard to see.

His face? (She fingers the blindfold.)

--You said Snoopy is easy to see. Now can you make him hard to see? What could you do to make him hard to see?

I'd pull the scarf down.

--Why would that make him hard to see?

Because it's something to cover.

--What else could you do to make him hard to see?

Hide him.

Some Children were not so direct.

Interview Example. James T. (Group BL, Age 9-4)

--Is Snoopy easy to see or hard to see?

Easy.

--Would you make him hard to see.

--Tell me what you did.

I covered his eyes.

--How did you cover his eyes? With that bandana?

Yes.

--That handkerchief is over his eyes now. Is he easy to see or hard to see?

Easy

--He's still easy to see. Can you make him hard to see now? Do something to make him hard to see.

Covered his eyes.

--Now is he hard to see?

No.

--Okay. Can you make him hard to see?

No.

--Think how you could make him hard to see. What could you do to make him hard to see?

Hide him.

The children who answered that Snoopy was "hard to see" invariably made him "easy to see" by removing his blindfold. Many of their responses to the subsequent interview questions were quite forthright, giving as the reason the blindfold was removed

such explanations as, "so that he can see what he is doing."

Interview Example. Cindy P. (Group ML, Age 8-7)

--Is Snoopy easy to see or hard to see?

Hard to see.

--Would you make him easy to see.

(She removes blindfold.)

--Why was he hard to see in the beginning?

Because he had a blindfold on his eyes.

--What did you do to make him easy to see?

Took off the blindfold.

--And why did that make him easy to see?

So he can see what he is doing and where he
is going.

Twenty-two children scored Correct in Interview III (seven BH, four BL, eight MH, three ML). A Chi-square analysis (including a Yates correction for continuity, $df=1$) revealed no difference between Groups BH and BL, Groups BH and MH or Groups BL and ML. A statistical difference was established between Groups MH and ML.

For this interview the statistical comparison perhaps is not as significant as is a comparison with Chomsky's earlier findings that "almost all five-year-olds answered incorrectly, and all nine-year-olds answered correctly (1969:27)," and in the six- to eight-year-old range some children answered correctly, others incorrectly.

The children in the present study were ages 8-6 to 9-8, falling at the upper end of the transitional ages and into the nine and ten year old range Chomsky had tested and found generally to have mastered the syntactic construction investigated. Children ages 8-6 to 9-6 in the present study gave correct interpretations; children 8-7 to 9-8 gave incorrect interpretations. Age was not a significant factor in determining success or failure. In view of Chomsky's findings, the results of the present study indicating that all but one child in the Bilingual High Group knew the test construction, while only half of the Bilingual Low Group interpreted the interview construction correctly, seem to illustrate a notable difference between these two Groups in spite of the lack of established statistical difference.

Interview IV--Pronominalization

The reference of pronouns in English sentences may be restricted to nonidentity (to someone not mentioned in the sentence) or may be unrestricted. In unrestricted sentences the pronoun may refer to the noun phrase elsewhere in the sentence (identity) or to someone else not mentioned in the sentence (nonidentity).

Since the rules for restriction are more complex than the rules applying to unrestricted sentences, it can be hypothesized that children who have not developed knowledge of restricted pronominal reference to nonidentity will interpret both unrestricted and restricted constructions as having unrestricted pronominal reference.

The Test Sentences were of three different structures. Only the answers to sentences 1-5 tested knowledge of the nonidentity requirement. The remaining sentences contain unrestricted references. The figures of Charlie Brown and Linus were included in this interview to assist the children in pronoun identification.

Test Sentences:

- 11. Linus thinks he knows everything.
Linus thinks that who knows everything?
- 1. He found out that Charlie Brown won the race.
Who found out?
And who won the race?
- 6. After he got the candy, Charlie Brown left.
Who got the candy?
Who left?
- 7. Before he went out, Linus took a nap.
Before who went out?
And who took the nap?
- 2. He didn't know why Linus felt so sad.
Who didn't know?
And who felt sad?
- 12. Charlie Brown yawned when he sat down.
When who sat down?
- 3. He was glad that Linus got the candy.
Who was glad?

- 8. If he wins the race, Linus will be happy.
If who wins the race?
- 4. He was five years old when Linus broke his leg.
Who was five years old?
And who broke his leg?
- 13. Charlie Brown said that he was hungry for
a big dinner.
Who was hungry?
- 9. When he was seven, Charlie Brown learned
to throw a ball.
When who was seven?
- 5. He thinks Linus knows how.
Who thinks?
- 14. Charlie Brown knew that he was going to be late.
Who was going to be late?
And who knew it?
- 10. When he changed schools, Linus was eight years
old.
When who changed schools?
- 15. Linus thinks he's going to win the race.
Who's going to win the race?

A limitation of the testing procedure was that while incorrect responses of restricted sentences were indications that the child did not know the tested restriction to nonidentity, correct responses to restricted sentences could not be assumed to be proof of knowledge of the restriction because in unrestricted sentences it also is possible

to correctly interpret the pronoun as referring to someone outside of the sentence (nonidentity). Since either response was correct with the simpler constructions, a consistent choice of the nonidentity response could be made for all the sentences.

For this reason, only children who interpreted all of the restricted sentences with nonidentity reference were concluded to know the pronominal restriction. Of the fourteen children who indicated knowledge of restriction twelve were in the High Groups (five BH, seven MH); two were from the ML Group.

Chi-square analysis (including the Yate's correction factor) revealed a difference between Groups BH and BL and between Groups MH and ML. There was no significant difference between the two High Groups or between the two Low Groups. The differences between the High and Low Groups were not related to age. Children from ages 8-6 to 9-6 responded correctly, while children from 8-7 to 9-8 responded incorrectly.

The findings of this interview are especially interesting in view of the conclusions of Chomsky's (1969) earlier study. She found scores in pronominal reference were more closely related to age than were scores in the other interviews. "With only three exceptions (ages 6.10, 8.10 and 5.2), the age cutoff between correct and incorrect response is approximately 5.6 (1969:109)." Chomsky further stated that pronominal reference "seems to be a fact about his language that a child learns with considerable regularity at about age five or six (1969:109)".

If the findings of the present study are indicative of language development patterns of children who score low in measured reading achievement, most of these children, bilingual and monolingual, do not know the tested restrictions to pronominalization in spite of the fact there is evidence provided in Chomsky's study that the construction is learned by most children by age five or six.

Compilation and Summary of

Interview Findings

The performances of each child on the four test constructions are shown in Tables 2 and 3. The Ask/Tell results are listed by Stage and Rank of development concluded from Analysis II of the Ask/Tell interview data. This information from the four interviews is compiled for inspection for four kinds of relationships:

The Relationship of Overall Test Results and Ages of the Children

No close relationship between age and compiled test results is evident--not surprising since no close age/score relationship occurred for any of the four interviews in this study.

The Relationship of Children's Overall Performance and a Possible Sequence of Development Among the Test Constructions

No sequence of development among the four test constructions for the children in the present study is apparent. For example, no statement can be made that if a child knows one particular construction he will probably have already learned another construction, which could then be presumed to have developed earlier. Chomsky found such a

Table 2. Results of Four Interviews: Bilingual Children's Scores Listed by Group and by Ask-q/Tell Stage and Rank (+ = Correct; - = Incorrect; Ask-q/Tell Stages and Ranks are defined in Table 1)

NAME	AGE	ASK-Q/TELL STAGE	EASY TO SEE	PROMISE STAGE	PRONOMINAL
<u>High Group</u>					
Monica A.	9-0	C ₁	+	4	+
Robert V.	9-5	C ₂	+	4	-
Mike O.	9-5	D ₂	-	4	+
Brenda F.	9-1	D ₂	+	4	+
Christine Y.	9-3	E ₂	+	4	-
Javier N.	8-10	E ₂	+	3	+
Donald L.	9-1	E ₂	+	4	+
Wendy R.	9-0	E ₄	+	4	-
<u>Low Group</u>					
Angelica M.	8-10	A ₁	-	3	-
Ricky F.	9-4	C ₁	+	3	-
Fernando L.	8-10	C ₁	-	3	-
Margie H.	8-7	C ₁	-	3	-
James T.	9-4	D ₁	+	3	-
Lillian M.	8-7	D ₁	-	3	-
Gilbert C.	9-2	D ₁	+	1	-
Frances Y.	9-6	D ₁	+	2	-

Table 3. Results of Four Interviews: Monolingual Children's Scores Listed by Group and by Ask-q/Tell Stage and Rank (+ = Correct; - = Incorrect; Ask-q/Tell Stages and Ranks are defined in Table 1)

NAME	AGE	ASK-Q/TELL STAGE	EASY TO SEE	PROMISE STAGE	PRONOMINAL
<u>High Group</u>					
Sonya J.	9-3	A ₂	+	2	+
Sean S.	9-6	C ₁	+	4	+
Angel S.	9-5	E ₃	+	3	+
Erika G.	9-6	E ₃	+	4	+
Tina B.	9-2	E ₃	+	4	-
Kerry P.	8-8	E ₃	+	4	+
Tim H.	8-11	E ₃	+	4	+
Fred C.	8-6	E ₃	+	4	+
<u>Low Group</u>					
John S.	9-6	A ₁	+	1	-
Cindy P.	8-7	C ₁	-	3	-
Fabian S.	9-0	C ₂	-	3	-
Norris L.	9-5	D ₁	-	1	-
Jenny G.	8-6	D ₁	+	1	+
LaMark B.	9-7	D ₃	+	1	-
Renae R.	9-8	E ₁	-	1	-
Ivalee F.	9-4	E ₁	-	3	+

sequence in her second study. In reporting the comparison between five structures investigated in that study, three of which were Easy to See, Promise, and Ask/Tell, Chomsky (1972:19) commented:

These structures appear to be quite divergent, and one would not ordinarily group them together as candidates for a developmental sequence, nor predict a specific order of acquisition. Yet our results show that they are acquired in the order listed. The children's performance on these constructions divides them into five stages as shown . . .

The order in which the constructions are listed by Chomsky is as follows: Easy to See, Promise, Ask/Tell, and then two constructions (And and Although) included in her 1972 study but not in her earlier 1969 study nor in the present research. Success in the Ask/Tell test in Chomsky's 1972 study was equivalent to placement at Stage E₄ in the present research. Success in Promise in Chomsky's 1972 study was placement at Stage 3 or 4. Chomsky continued,

Children who fail all five constructions are at Stage 1; Stage 2 children pass Easy to See and fail the others; Stage 3 children pass Easy to See and Promise and fail the others; Stage 4 children pass all but Although; Stage 5 children pass all five constructions.

What is interesting in the data is the uniformity of the results. The amount of divergence from this sequence of acquisition is extremely small, he

children's individual responses deviating from the observed pattern at the rate of four responses per one hundred (Chomsky 1972:20).

When a listing similar to Chomsky's (1972:19), omitting the Pronominalization test as she did and omitting the structures of And and Although not included in the present research, was tabulated, using the present study, a pattern of sequential development could be seen. With the exception of one child, the children in the two High Groups performed on the three interviews in a manner seeming to reveal the sequence of development among the three constructions. However, this developmental sequence on the three constructions was not evidenced consistently by children in the Low Groups.

The Relationship of Performances of the Children in Different Study Groups

The major Group differences in the present study were between children who scored high in measured reading achievement and those who scored low in measured reading achievement, and not between bilingual children and monolingual children. When considering this information, however, it is crucial to remember that Spanish/English-speaking bilingual children in the public schools in the Southwest score low on standardized reading achievement tests in significantly larger proportional numbers than do monolingual English-speaking children.

The Relationship of The Findings of the
Present Study and Chomsky's Earlier Findings

This report began with cautionary statements regarding application of linguistic research to a population linguistically different from the research population. The present study of children linguistically different from Chomsky's original subjects confirmed Chomsky's (1969, 1972) major findings of the late acquisition of some syntactic structures and of the wide range of differences in rate of acquisition among children. Acquisition of the selected grammatic structures was found to be a function of individual development rather than of age. The present investigation did yield some data which raised important questions regarding order of acquisition within the ask/tell constructions, order of acquisition among the various constructions studied, and the relationship of pronominalization acquisition to age.

An order of development within the ask/tell structures was evident only in the MH Group when Chomsky's analysis model was used. Only after a second analysis was applied, one which focused on ask-q responses and deemphasized differentiation between ask-q and tell instructions, was an orderly developmental sequence revealed for Groups BH, BL and ML.

Furthermore, as mentioned earlier, the order of acquisition among the Ask/Tell, Promise and Easy to See structures was substantiated in only the High Groups in the present study. The order of acquisition of the three structures was not consistent for the Low Groups.

Of perhaps even more importance, children measuring low in reading achievement and failing the three syntactic structures which

Chomsky related more closely to individual rate of development than to age (Ask/Tell, Promise, and Easy to See), also generally failed the test of Pronominalization, which Chomsky (1969) had found virtually all children in her study knew by age five or six, an age three to four years younger than that of the children in the present study. This finding is especially significant since it may call into question structures established as age-related in other studies conducted only with middle-class children. It appears to be crucial that such findings be tested with children who do not conform linguistically to the original research subjects.

There was another significant finding of the present study similarly at variance with Chomsky's findings. Structures 1 (ask/tell) and 2 (promise) were not "known by all children over 9" in the present research. Chomsky had found this to be true for the children she investigated.

A high proportion of the Spanish/English-speaking school-children, as well as a substantial number of monolingual English-speaking children, encounter difficulties in developing the language skills emphasized in the public schools. Their language learning processes, beyond the acquisition of basic language forms, may indeed differ qualitatively from those learning processes of children, bilingual and monolingual, who enjoy a higher degree of success in school. These individual differences in children, or in groups of children, remain an important consideration for the applied linguist.

Caution is the biword when applying linguistic information to children who clearly do not conform linguistically to the children who have served as research subjects.

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